JOURNAL OF OPTIMIZATION THEORY AND APPLICATIONS

Editorial Board

Volume 59, 1988

Editor-in-Chief: A. Miele

Aero-Astronautics Group, 230 Ryon Building
Rice University, POB 1892, Houston, Texas 77251

Secretary: P. Thomas

Aero-Astronautics Group, 230 Ryon Building
Rice University, POB 1892, Houston, Texas 77251

Associate Editors

J. Abadie, USA
B. R. Agins, USA
M. Avriel, Israel
J. E. Bailey, USA
N. V. Banichuk, USSR
L. D. Berkovitz, USA
J. V. Breakwell, USA
C. G. Broyden, England
R. Bulirsch, Germany
L. Cesari, USA
R. Conti, Italy
J. B. Cruz, Jr., USA
L. C. W. Dixon, England
A. V. Fiacco, USA
I. Galligani, Italy
F. Giannessi, Italy
M. A. Golberg, USA
K. G. Guderley, USA
H. Halkin, USA
E. J. Haug, Jr., USA
M. R. Hestenes, USA
Y. C. Ho, USA
H. Y. Huang, USA
D. G. Hull, USA
M. D. Intriligator, USA
R. E. Kalaba, USA
R. E. Kalman, USA
S. Karamardian, USA
G. Leitmann, USA
C. T. Leondes, USA
D. G. Luenberger, USA
K. A. Lurie, USSR
O. L. Mangasarian, USA
D. Q. Mayne, England
L. Meirovitch, USA
M. Pachter, South Africa
K. S. Pister, USA
E. Polak, USA
L. S. Pontryagin, USSR
R. Rishel, USA
S. M. Roberts, USA
R. W. H. Sargent, England
W. E. Schmitendorf, USA
D. F. Shanno, USA
M. Simaan, USA
J. L. Speyer, USA
W. Stadler, USA
R. A. Tapia, USA
V. A. Troitskii, USSR
P. Varaiya, USA
P. L. Yu, USA
L. A. Zadeh, USA
F. Zirilli, Italy

Published monthly at 71 Winterstoke Road, Bristol BS3 2NT, England, by Plenum Publishing Corporation, 233 Spring Street, New York, N.Y. 10013. In 1989, Volumes 60, 61, 62, and 63 (3 issues each) will be published. Subscription orders should be addressed to the publisher. *Journal of Optimization Theory and Applications* is abstracted or indexed in Applied Mechanics Review, Computer and Information Systems Abstracts Journal, Computing Review, Current Contents, Engineering Index, Mathematical Reviews, Referativnyi Zhurnal, Science Citation Index, and Zentralblatt für Mathematik. © 1989 Plenum Publishing Corporation. *Journal of Optimization Theory and Applications* participates in the Copyright Clearance Center (CCC) Transactional Reporting Service. The appearance of a code line at the bottom of the first page of an article in this journal indicates the copyright owner's consent that copies of the article may be made for personal or internal use. However, this consent is given on condition that the copier pay a flat fee of $6.00 per copy per article (no additional per-page fees) directly to the Copyright Clearance Center, Inc., 27 Congress Street, Salem, Massachusetts 01970, for all copying not explicitly permitted by Sections 107 or 108 of the U.S. Copyright Law. The CCC is a nonprofit clearinghouse for the payment of photocopying fees by libraries and other users registered with the CCC. Therefore, this consent does not extend to other kinds of copying, such as copying for general distribution, for advertising or promotional purposes, for creating new collective works, or for resale, nor to the reprinting of figures, tables, and text excerpts. 0022-3239/89 $6.00

Subscription rates:
Volumes 56, 57, 58, and 59, 1988 (3 issues each) $133.75 per volume (outside the U.S., $148.75 per volume).
Volumes 60, 61, 62, and 63, 1989 (3 issues each) $143.75 per volume (outside the U.S., $166.25 per volume).

Second-class postage paid at Jamaica, N.Y. 11431. Postmaster: Send address changes to *Journal of Optimization Theory and Applications*, Plenum Publishing Corporation, 233 Spring Street, New York, N.Y. 10013. Air freight and mailing in the USA by Publications Expediting, Inc., 200 Meacham Avenue, Elmont, N.Y. 11003.

Printed in Great Britain.

Journal of Optimization Theory and Applications is published monthly at 71 Winterstoke Road, Bristol BS3 2NT, England, by Plenum Publishing Corporation, 233 Spring Street, New York, N.Y. 10013. In 1988, Volumes 56, 57, 58, and 59 (3 issues each) will be published. Subscription orders should be addressed to the publisher. *Journal of Optimization Theory and Applications* is abstracted or indexed in Applied Mechanics Reviews, Computer and Information Systems Abstracts Journal, Computing Reviews, Current Contents, Engineering Index, Mathematical Reviews, Referativnyi Zhurnal, Science Citation Index, and Zentralblatt für Mathematik. © 1988 Plenum Publishing Corporation. *Journal of Optimization Theory and Applications* participates in the Copyright Clearance Center (CCC) Transactional Reporting Service. The appearance of a code line at the bottom of the first page of an article in this journal indicates the copyright owner's consent that copies of the article may be made for personal or internal use. However, this consent is given on the condition that the copier pay the flat fee of $6.00 per copy per article (no additional per-page fees) directly to the Copyright Clearance Center, Inc., 27 Congress Street, Salem, Massachusetts 01970, for all copying not explicitly permitted by Sections 107 or 108 of the U.S. Copyright Law. The CCC is a nonprofit clearinghouse for the payment of photocopying fees by libraries and other users registered with the CCC. Therefore, this consent does not extend to other kinds of copying, such as copying for general distribution, for advertising or promotional purposes, for creating new collective works, or for resale, nor to the reprinting of figures, tables, and text excerpts. 0022-3239/88 $6.00.

JOURNAL OF OPTIMIZATION
THEORY AND APPLICATIONS

Vol. 59, No. 1 October 1988

CONTENTS

CONTRIBUTED PAPERS

Formulation and Analysis of Combat Problems as Zero-Sum Bicriterion Differential Games, *U. R. Prasad and D. Ghose* 1

Stochastic Pursuit-Evasion Differential Games in 3D: The Case of Variable Speed, *R. De Villiers, T. Miloh, and Y. Yavin* 25

Superlinear Convergence Theorem in the ABSg Class of Algorithms for Nonlinear Algebraic Equations, *J. Abaffy* 39

A Projected Newton Method in a Cartesian Product of Balls, *M. Gawande and J. C. Dunn* 45

Sequential Stackelberg Equilibria in Two-Person Games, *M. Breton, A. Alj, and A. Haurie* 71

Switching Control of Piecewise-Deterministic Processes, *S. M. Lenhart and Y. C. Liao* 99

A New Control Method and Its Robustness for a Class of Nonlinear Systems, *Y. Liu, M. Cheng, and W. B. Gao* 117

Regularity Properties of Time-Optimal Trajectories of an Analytic Single-Input Control-Linear System in Dimension Three, *H. Schättler* 135

TECHNICAL NOTE

Lower Bounds of Controlling Parameters of Exact Penalty Functions in Locally Lipschitz Programming, *Y. Tanaka* 147

BOOK NOTICES 153

GENERAL INFORMATION

Editorial Policy 155

Preparation of Papers 157

Editorial Addresses 161

JOURNAL OF OPTIMIZATION
THEORY AND APPLICATIONS

Vol. 59, No. 2 November 1988

CONTENTS

CONTRIBUTED PAPERS

A New Sequential Cluster Algorithm for Optical Lens Design, *G. Elsner* 165

Some Remarks on Computer Aided Design of Optimal Lens Systems, *M. Walk and J. Niklaus* 173

Dynamically Similar Control Systems and a Globally Minimum Gain Control Technique: IMSC, *H. Öz* 183

Sufficient Optimality Conditions and Duality for a Quasiconvex Programming Problem, *C. R. Bector, S. Chandra, and M. K. Bector* 209

Using Convex Envelopes to Solve the Interactive Fixed-Charge Linear Programming Problem, *H. P. Benson and S. S. Erenguc* 223

An LP-Based Successive Overrelaxation Method for Linear Complementarity Problems, *T. H. Shiau* 247

Optimal Value Function in Semi-Infinite Programming, *M. A. Goberna and M. A. Lopez* 261

On the Maximum Principle for Deterministic Impulse Control Problems, *R. Rempała and J. Zabczyk* 281

On Two Generalizations of Pareto Minimality, *T. Staib* 289

A Stochastic Steepest-Descent Algorithm, *Y. Wardi* 307

Auxiliary Problem Principle Extended to Variational Inequalities, *G. Cohen* 325

TECHNICAL NOTE

Remarks on Convex Cones, *A. Sterna-Karwat* 335

BOOK NOTICES 341

GENERAL INFORMATION

Editorial Policy 343

Preparation of Papers 345

Editorial Addresses 349

JOURNAL OF OPTIMIZATION
THEORY AND APPLICATIONS

Vol. 59, No. 3 December 1988

CONTENTS

CONTRIBUTED PAPERS

An Interior Semi-Infinite Programming Method, *M. D. Asić and V. V. Kovacević-Vujcić* 353

Nested Monotony for Variational Inequalities over Product of Spaces and Convergence of Iterative Algorithms, *G. Cohen and F. Chaplais* .. 369

Solution for a Dynamic Bargaining Problem with an Application to Resource Management, *H. Ehtamo, J. Ruusunen, V. Kaitala, and R. P. Hämäläinen* 391

Lower Semicontinuity in Domain Optimization Problems, *N. Fujii* .. 407

Characterizing the Nondominated Set by Separable Functions, *M. I. Henig* 423

Control Problems with Random and Progressively Known Targets, *A. Leizarowitz* 445

A Markov Chain Game with Dynamic Information, *G. J. Olsder and G. P. Papavassilopoulos* 467

A Method of Stochastic Subgradients with Complete Feedback Stepsize Rule for Convex Stochastic Approximation Problems, *W. Syski* 487

Some Minimax Problems of Vector-Valued Functions, *T. Tanaka* 505

TECHNICAL COMMENT

A Problem on Convex Functions, *F. Giannessi* 525

GENERAL INFORMATION

Editorial Policy 527

Preparation of Papers 529

Editorial Addresses 533

AUTHOR INDEX TO VOLUME 59 537